

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Goodrich et al.

: Group Art Unit: 1744

Serial No.: 09/596,429

: Examiner: E. McKane

Cherbaji

Filed: June 15, 2000

For:

METHODS AND APPARATUS
FOR INACTIVATION OF
BIOLOGICAL CONTAMINANTS
USING PHOTSENSITIZERS

VIA HAND DELIVERY	
I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via Hand Delivery	
DATE <u>3/12/01</u>	NAME <u>Gregory L. Smith</u> <u>ASH</u>

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Asst. Commissioner for Patents
Washington, D.C. 20231

Sir:

Further to the Information Disclosure Statement filed November 7, 2000, the Examiner is respectfully requested to consider the additional references, copies enclosed, which may qualify as prior art. For the Examiner's convenience, the references are listed on the attached Patent and Trademark Office Form PTO-1449.

It is believed this submission does not require the payment of a fee as it is being submitted prior to the issuance of an Office Action on the merits of the application. If this is incorrect, please deduct the appropriate fee from deposit account no. 07-1969.

Respectfully submitted,

Susan Doughty

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Reg. No. 43,595

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Attorney Docket No. 27-98B

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Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

U.S. PATENT DOCUMENTS

Exmr. Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
MRC		Patented 09/357,188	8/21/01	6,277,337 Goodrich et al.	422	186.3	07/20/99
		Patented 09/119,666	7/10/01	6,258,577 Goodrich et al.	435	173.3	07/21/98
		Patented 08/924,519	3/13/01	6,260,287	604	6.01	09/05/97
		6,087,141	07/11/00	Margolis-Nunno et al.	435	173.3	_____
		6,020,333	02/01/00	Berque	514	251	_____
		5,976,884	11/02/99	Chapman et al.	436	34	_____
		5,935,092	08/10/99	Sun et al.	604	4	_____
		5,922,278	07/13/99	Chapman et al.	422	22	_____
		5,908,742	06/01/99	Lin et al.	435	2	_____
		5,891,705	04/06/99	Budowsky et al.	435	238	_____
		5,876,676	03/02/99	Stossel et al.	422	012	_____
		5,871,900	02/16/99	Wollowitz et al.	435	2	_____
		5,869,701	02/09/99	Park et al.	549	283	_____
		5,866,074	02/02/99	Chapman et al.	422	82.09	_____
		5,854,967	12/29/98	Hearst et al.	422	186.3	_____
		5,846,961	12/08/98	Van Dyke	514	171	_____
		5,843,459	12/01/98	Wang et al.	424	231.1	_____
		5,834,198	11/10/98	Famulok et al.	435	6	_____
		5,827,644	10/27/98	Floyd et al.	435	2	_____
		5,817,519	10/06/98	Zelmanovic et al.	436	63	_____
		5,811,144	09/22/98	Bordelcau et al.	426	330.4	_____
		5,798,523	08/25/98	Villeneuve et al.	250	234	_____
		5,798,238	08/25/98	Goodrich, Jr. et al.	435	173.3	_____
MRC		5,789,601	08/04/98	Park et al.	549	283	_____

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MRL		5,772,960	06/30/98	Ito et al.	422	41	
		5,756,553	05/26/98	Iguchi et al.	514	772.3	
		5,739,013	04/14/98	Budowsky et al.	435	91.1	
		5,714,328	02/03/98	Magda et al.	435	6	
		5,712,086	01/27/98	Horowitz et al.	435	2	
		5,709,991	01/20/98	Lin et al.	435	2	
		5,709,653	01/20/98	Leone	604	20	
		5,707,401	01/13/98	Talmore	607	88	
		5,702,684	12/30/97	McCoy et al.	424	10.3	
		5,698,677	12/16/97	Eibl et al.	530	381	
		5,698,524	12/16/97	Mach et al.	514	22	
		5,691,132	11/25/97	Wollowitz et al.	435	2	
		5,688,475	11/18/97	Duthie, Jr.	422	186.3	
		5,686,436	11/11/97	Van Dyke	514	171	
		5,683,768	11/04/97	Shang et al.	428	35.2	
		5,683,661	11/04/97	Hearst et al.	422	186.3	
		5,658,722	08/19/97	Margolis-Nunno et al.	435	2	
		5,658,530	08/19/97	Dunn	422	24	
		5,654,443	08/05/97	Wollowitz et al.	549	282	
		5,653,887	08/05/97	Wahl et al.	210	745	
		5,652,096	07/29/97	Cimino	435	6	
		5,643,334	07/01/97	Eckhouse et al.	607	88	
		5,639,382	06/17/97	Brown	210	739	
		5,639,376	06/17/97	Lee et al.	210	645	
		5,628,727	05/13/97	Hakky et al.	604	6	
		5,624,435	04/29/97	Furumoto et al.	606	10	
MRL		5,622,867	04/22/97	Livesey et al.	436	18	

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ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
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MR		5,607,924	03/04/97	Magda et al.	514	44	—
		5,597,722	01/28/97	Chapman et al.	435	238	—
		5,593,823	01/14/97	Wollowitz et al.	435	2	—
		5,587,490	12/24/96	Goodrich, Jr. et al.	549	282	—
		5,571,666	11/05/96	Floyd et al.	435	2	—
		5,569,579	10/29/96	Murphy	435	2	—
		5,557,098	09/17/96	D'Silva	250	222.1	—
		5,556,993	09/17/96	Wollowitz et al.	549	282	—
		5,556,958	09/17/96	Carroll et al.	536	25.3	—
		5,550,111	08/27/96	Suhadolnik et al.	514	44	—
		5,547,635	08/20/96	Duthie, Jr.	422	24	—
		5,545,516	08/13/96	Wagner	435	2	—
		5,536,238	07/16/96	Bischof	604	6	—
		5,527,704	06/18/96	Wolf, Jr. et al.	435	283.1	—
		5,516,629	05/14/96	Park et al.	435	2	—
		5,503,721	04/02/96	Hearst et al.	204	157.6	—
		5,487,971	01/30/96	Holme et al.	435	2	—
		5,482,828	01/09/96	Lin et al.	435	2	—
		5,474,891	12/12/95	Murphy	435	2	—
		5,466,573	11/14/95	Murphy et al.	435	2	—
		5,459,030	10/17/95	Lin et al.	435	2	—
		5,433,738	07/18/95	Stinson	607	92	—
		5,427,695	06/27/95	Brown	210	805	—
		5,419,759	05/30/95	Naficyn	604	5	—
		5,418,130	05/23/95	Platz et al.	435	2	—
		5,378,601	01/03/95	Gepner-Puszkina	435	2	—
MR		5,376,524	12/27/94	Murphy et al.	435	2	—

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MRL		5,366,440	11/22/94	Fossel	604	4	—
		5,360,734	11/01/94	Chapman et al.	435	238	—
		5,358,844	10/25/94	Stossel et al.	435	2	—
		5,344,918	09/06/94	Dazey et al.	530	381	—
		5,344,752	09/06/94	Murphy	435	2	—
		5,342,752	08/30/94	Platz et al.	435	2	—
		5,340,716	08/23/94	Ullman et al.	435	6	—
		5,318,023	06/07/94	Vari et al.	128	633	—
		5,304,113	04/19/94	Sieber et al.	604	4	—
		5,300,019	04/05/94	Bischof et al.	604	4	—
		5,290,221	03/01/94	Wolf, Jr. et al.	604	4	—
		5,288,647	02/22/94	Zimlich, Jr. et al.	436	174	—
		5,288,605	02/22/94	Lin et al.	435	902	—
		5,273,713	12/28/93	Levy	422	22	—
		5,269,946	12/14/93	Goldhaber et al.	210	767	—
		5,258,124	11/02/93	Bolton et al.	210	748	—
		5,248,506	09/28/93	Holme et al.	424	533	—
		5,247,178	09/21/93	Ury et al.	250	438	—
		5,236,716	08/17/93	Carmen et al.	424	532	—
		5,234,808	08/10/93	Murphy	435	2	—
		5,232,844	08/03/93	Horowitz et al.	435	173.1	—
		5,229,081	07/20/93	Suda	427	186	—
		5,216,251	06/01/93	Matschke	250	455.11	—
		5,192,264	03/09/93	Fossel	604	4	—
		5,185,532	02/09/93	Zabsky et al.	250	455.11	—
		5,184,020	02/02/93	Hearst et al.	250	455.11	—
MRL		5,166,528	11/24/92	Le Vay	250	455.11	—

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MRL		5,150,705	09/29/92	Stinson	128	396	—
		5,147,776	09/15/92	Koerner, Jr.	435	2	—
		5,133,932	07/28/93	Gunn et al.	422	24	—
		5,123,902	06/23/92	Müller et al.	604	21	—
		5,120,649	06/09/92	Horowitz et al.	435	713	—
		5,114,957	05/19/92	Hendler et al.	514	356	—
		5,114,670	05/19/92	Duffey	422	24	—
		5,095,115	03/10/92	Grimmer et al.	544	244	—
		5,092,773	03/03/92	Levy	433	224	—
		5,089,384	02/18/92	Hale	435	2	—
		5,089,146	02/18/92	Carmen et al.	210	782	—
		5,041,078	08/20/91	Matthews et al.	604	4	—
		5,039,483	08/13/91	Sieber et al.	422	28	—
		5,030,200	07/09/91	Judy et al.	604	5	—
		5,020,995	06/04/91	Levy	433	215	—
		5,017,338	05/21/91	Surgenor	422	41	—
		5,011,695	04/30/91	Dichtelmuller et al.	424	529	—
		4,999,375	03/12/91	Bachynsky et al.	514	455	—
		4,998,931	03/12/91	Slichter et al.	604	20	—
		4,994,367	02/19/91	Bode et al.	435	2	—
		4,992,363	02/12/91	Murphy	435	2	—
		4,986,628	01/22/91	Lozhenko et al.	350	96.29	—
		4,978,688	12/18/90	Louderback	514	722	—
		4,961,928	10/09/90	Holme et al.	424	533	—
		4,960,408	10/02/90	Klainer et al.	604	4	—
		4,952,812	08/28/90	Miripol et al.	250	455.1	—
MRL		4,950,665	08/21/90	Floyd	514	222.8	—

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MRC		4,948,980	08/14/90	Wedekamp	250	504 R	
		4,946,438	08/07/90	Reemtsma et al.	604	53	
		4,930,516	06/05/90	Alfano et al.	128	665	
		4,921,473	05/01/90	Lee et al.	494	27	
		4,915,683	04/10/90	Alfano et al.	128	665	
		4,880,788	11.14.89	Moake et al.	514	150	
		4,878,891	11/07/89	Judy et al.	604	5	
		4,866,282	09/12/89	Miripol et al.	250	455.1	
		4,861,704	08/29/89	Reemtsma et al.	435	1	
		4,833,165	05/23/89	Louderback	514	694	
		4,831,268	05/16/89	Fisch et al.	250	432 R	
		4,788,038	11/29/88	Matsunaga	422	22	
		4,775,625	10/04/88	Sieber	435	238	
		4,748,120	05/31/88	Wiesehahn	435	173	
		4,737,140	04/12/88	Lee et al.	604	4	
		4,727,027	02/23/88	Wiesehahn et al.	435	173	
		4,726,949	02/23/88	Miripol et al.	424	101	
		4,708,715	11/24/87	Troutner et al.	604	6	
		4,695,460	09/22/87	Holme	424	101	
		4,693,981	09/15/87	Wiesehahn et al.	435	238	
		4,684,521	08/04/87	Edelson	424	101	
		4,683,889	08/04/87	Edelson	128	395	
		4,683,202	07/28/87	Mullis	435	91	
		4,683,195	07/28/87	Mullis et al.	435	6	
		4,651,739	03/24/87	Oseroff et al.	128	395	
		4,649,151	03/10/87	Dougherty et al.	514	410	
MRC		4,648,992	03/10/87	Graf et al.	540	124	

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MRC		4,645,649	02/24/87	Nagao	422	186.3	—
		4,642,171	02/10/87	Sekine et al.	204	298	—
		4,623,328	11/18/86	Hartranft	604	4	—
		4,614,190	09/30/86	Stanco et al.	128	395	—
		4,613,322	09/23/86	Edelson	604	6	—
		4,612,007	09/16/86	Edelson	604	5	—
		4,608,255	08/26/86	Kahn et al.	424	101	—
		4,604,356	08/05/86	Blake, II	435	194	—
		4,596,547	06/24/86	Troutner	604	4	—
		4,578,056	03/25/86	King et al.	604	6	—
		4,576,143	03/18/86	Clark, III	128	1 R	—
		4,573,962	03/04/86	Troutner	604	6	—
		4,573,961	03/40/86	King	604	6	—
		4,573,960	03/40/86	Goss	604	6	—
		4,568,328	02/04/86	King	604	6	—
		4,493,981	01/15/85	Payne	219	450	—
		4,481,167	11/06/84	Ginter et al.	422	29	—
		Re 32,874 of 4,474,153	02/21/89 05/08/84	Rock et al.	424	101	—
		4,467,206	08/21/84	Taylor et al.	250	435	—
		4,464,166	08/07/84	Edelson	604	6	—
		4,456,512	06/26/84	Bieler et al.	204	162 R	—
		4,428,744	01/31/84	Edelson	604	6	—
		4,424,201	01/03/84	Valinsky et al.	424	3	—
		4,421,987	12/20/83	Herold	250	492.1	—
		4,407,282	10/04/83	Swartz	604	20	—
MRC		4,402,318	09/06/83	Edelson	604	6	—

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MR		4,398,906	08/16/83	Edelson	604	6	—
		4,398,031	08/09/83	Bender et al.	549	282	—
		4,336,809	06/29/82	Clark	128	665	—
		4,321,919	03/30/82	Edelson	128	124 R	—
		4,321,918	03/30/82	Clark, II	128	124 R	—
		4,312,883	01/26/82	Baccichetti et al.	424	279	—
		4,196,281	04/01/80	Hearst et al.	536	28	—
		4,181,128	01/01/80	Swartz	128	207.21	—
		4,173,631	11/06/79	Graham et al.	424	180	—
		4,169,204	09/25/79	Hearst et al.	546	270	—
		4,139,348	02/13/79	Swartz	23	232 E	—
		4,124,598	11/07/78	Hearst et al.	260	343.21	—
		3,927,325	12/16/75	Hungate et al.	250	435	—
		3,926,556	12/16/75	Boucher	21	54 R	—
		3,920,650	11/18/75	Spencer et al.	260	251.5	—
		3,894,236	07/08/75	Hazelrigg	250	435	—
		3,864,081	02/04/75	Logrippo	21	102 R	—
		3,852,032	12/03/74	Urbach	21	54	—
		3,776,694	12/04/73	Leittl	21	102 R	—
		3,705,985	12/12/72	Manning et al.	250	106 S	—
		3,683,183	08/08/72	Vizzini et al.	250	44	—
		3,683,177	08/08/72	Velo	250	43	—
		3,456,053	07/15/69	Crawford	424	89	—
		3,189,598	06/15/65	Yagi et al.	260	211.3	—
		2,825,729	03/04/58	Petering et al.	260	251.5	—
		2,654,735	10/06/53	Funk et al.	260	211.3	—
MR		2,340,890	02/08/44	Lang et al	250	429	—

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MRC		2,654,735	10/06/53	Funk et al.	260	211.3	—
		2,340,890	02/08/44	Lang et al	250	429	—
		2,212,330	08/20/40	Thomas	250	52	—
		2,212,230	08/20/40	Goldmann	250	11	—
		2,111,491	03/15/38	Kuhn et al.	260	29	—
		2,056,614	10/06/36	Moehler	21	18	—
		1,961,700	06/05/34	Moehler	167	3	—
		1,733,239	10/29/29	Roberts	607	93	—
MRC		683,690	10/01/01	Johnson	604	20	—

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes/No
MRC		0 196 515	10/08/86	EP	—	—	Yes
		0 679 398 A	11/02/95	EP	—	—	Yes
		WO 00/04930	03/02/00	PCT	—	—	Abstract only
		WO 99/11305	11/03/99	PCT	—	—	Yes
		WO 98/31219	23/07/98	PCT	—	—	Yes
		WO 98/30545	16/07/98	PCT	—	—	Yes
		WO 97/36634	09/10/97	PCT	—	—	Yes
		WO 97/36581	09/10/97	PCT	—	—	Yes
		WO 97/22245	26/06/97	PCT	—	—	Yes
		WO 97/07674	06/03/97	PCT	—	—	Yes
		WO 96/14740	23/05/96	PCT	—	—	Yes
		WO 95/16348	22/06/95	PCT	—	—	Yes
		WO 95/12973	18/05/95	PCT	—	—	Yes
		WO95/11028	27/04/95	PCT	—	—	Yes
MRC		WO 95/02325	26/01/95	PCT	—	—	Yes

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MRL		WO 92/17173	09/10/92	PCT	—	—	abstract only
		WO 92/11057	09/07/92	PCT	—	—	Yes
		WO 91/02529	07/03/91	PCT	—	—	Yes
		WO 89/06702	27/07/89	PCT	—	—	Yes
		0 801 072 A2	15/10/97	EP	—	—	Yes
		0 525 138 B1	20/12/91	EP	—	—	Yes
		0 491/757	08/09/90	EP	—	—	abstract only
		0 196 515 A1	13/03/86	EP	—	—	Yes
		0 124 363	27/04/84	EP	—	—	Yes
		0 066,886	08/06/82	EP	—	—	Yes
		2674753	09/10/92	FR	—	—	Abstract only
		2715303	28/07/95	FR	—	—	Abstract only
MRL		2718353	13/10/95	FR	—	—	Abstract only
					—	—	

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

MRL		Abdurashidova, G.G. et al., "Polynucleotide-protein interactions in the translation system. Identification of proteins interacting with tRNA in the A- and P-sites of E. coli ribosomes," (1979) <i>Nucleic Acids Res.</i> 6(12) :3891-3909
MRL		Berezovskii, V.M. and Eremenko, T.V. (Nov 1961), "Studies in the Allo- and Isoalloxazine Series. IV. New Synthesis of 2'-Desoxyriboflavin and Synthesis," <i>J. Gen. Chem. USSR</i> 31(11) :3575-3578
MRL		Bhatia, J. et al. (May/June 1983), "Riboflavin Enhances Photo-oxidation of Amino Acids under Simulated Clinical Conditions," <i>J. Parenteral Enteral Nutr.</i> 7(3) :277-279
MRL		Brodie, A.F. and Watanabe, T., (1966), "Mode of action of vitamin K in microorganisms," <i>Vitam. Horm.</i> 24 :447-463
MRL		Budowsky, E.I. et al., (1986), "Induction of polynucleotide-protein cross-linkages by ultraviolet irradiation," <i>Eur. J. Biochem.</i> 159 :95-101
MRL		Budowsky, E.I. and Abdurashidova, G.G., (1989), "Polynucleotide-Protein Cross-Links Induced by Ultraviolet Light and Their Use for Structural Investigation of Nucleoproteins," <i>Progress in Nucleic Acid Res. and Mol. Biol.</i> 37 :1-65

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Budowsky, E.I. (1991), "Problems and Prospects for Preparation of Killed Antiviral Vaccines," <i>Adv. Virus Res.</i> 39 :255-290
MRL		Budowsky, E.I. et al. (1991), "Principles of selective inactivation of viral genome. VI. Inactivation of the infectivity of the influenza virus by the action of β -propiolactone," <i>Vaccine</i> 9 :398-402
MRL		Budowsky, E.I. et al. (July 1991), "Principles of selective inactivation of viral genome. VII. Some peculiarities in determination of viral suspension infectivity during inactivation by chemical agents," <i>Vaccine</i> 9 :473-476
MRL		Budowsky, E.I. et al. (1993), "Principles of selective inactivation of viral genome. VIII. The influence of β -propiolactone on immunogenic and protective activities of influenza virus," <i>Vaccine</i> 11 (3):343-348
MRL		Budowsky, E.I. et al., "Preparation of cyclic 2',3'-monophosphates of oligoadenylates (A2'p) _n A>p and A3'p(A2'p) _n A>p," (1994) <i>Eur. J. Biochem.</i> 220 :97-104
MRL		Cadet, J. et al. (1983), "Mechanisms and Products of Photosensitized Degradation of Nucleic Acids and Related Model Compounds," <i>Israel J. Chem.</i> 23 :420-429
MRL		Cairns, W.L. and Metzler, D.E. (June 1971), "Photochemical Degradation of Flavins. VI. A New Photoproduct and Its Use in Studying the Photolytic Mechanism," <i>J. Am. Chem. Soc.</i> 93 :2772-2777
MRL		Cerman, J. and Hais, I.M. (Mar 1972), "Esters of 6,7-Dimethyl-9-hydroxymethylisoalloxazine as Photodegradation Products of Riboflavin and Formylmethylflavin in Media Containing Fatty Acids," <i>J. AM. Chem. Soc.</i> 94 (5):1741-1742
MRL		Chastain, J.L. and McCormick, D.B. (1991) IN <u>Chemistry and Biochemistry of Flavoinzymes</u> , Volume I, Chapter 6, Muller, F. (ed.), CRC Press, Boston, pp. 195-200
MRL		Chastain, J.L. and McCormick, D.B. (1987), "Clarification and Quantitation of Primary (Tissue) and Secondary (Microbial) Catabolites of Riboflavin That are Excreted in Mammalian (Rat) urine," <i>J. Nutr.</i> , pp. 468-475
MRL		Chow, C.S. and Barton, J.K., (June 1992), "Recognition of G-U mismatches by tris(4,7-diphenyl-1,10-phenanthroline)rhodium(III)," <i>Biochemistry</i> 31 (24):5423-5429
MRL		Deutsch, E., "Vitamin K in medical practice: adults," (1966) <i>Vitam. Horm.</i> 24 :665-680
MRL		Edwards, A.M. et al. (1994), "Visible light effects on tumoral cells in a culture medium enriched with tryptophan and riboflavin," <i>J. Photochem. Photobiol. B: Biol.</i> 24 :179-186
MRL		Ennever et al. (1983), "Potential for Genetic Damage from Multivitamin Solutions Exposed to Phototherapy Illumination," <i>Pediatr. Res.</i> 17 :192-194

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Ennever, J.F. and Speck, W.T. (1983), "Short Communication. Photochemical Reactions of Riboflavin: Covalent Binding to DNA and to Poly (dA)•Poly (dT)," <i>Pediatr. Res.</i> 17:234-236
MRL		Everett et al. (1952), "Aryl-2-halogenoalkylamines. Part XII. Some Carboxylic Derivatives of NN-Di-2-chloroethylaniline," <i>J. Chem. Soc.</i> , pp 2386-2392
MRL		Friedman et al., (1995), "Reducing the infectivity of blood components - what we have learned", <i>Immun. Invest.</i> 24(1&2):49-71
MRL		Fritz et al. (1987), "Photochemical Properties of Flavin Derivatives," <i>Photochem. Photobiol.</i> 45(1):113-117
MRL		Fritz et al. (1987), "Triplet Lifetimes of Some Flavins," <i>Photochem. Photobiol.</i> 45(4):539-541
MRL		Galston, A.W. (1949), "Riboflavin-sensitized Photooxidation of Indole-acetic Acid and Related Compounds," <i>Proc. Natl. Acad. Sci.</i> 35:10-17
MRL		Ghiron, C.A. and Spikes, J.D., (1965), "The flavin-sensitized photoinactivation of trypsin", <i>Photochem. And Photobio.</i> 4:13-26
MRL		Gomyo, T. and Fujimaki, M. (1970), "Studies on Changes of Protein by Dye Sensitized Photooxidation, Part III. On the Photodecomposition Products of Lysozyme," <i>Agr. Biol. Chem.</i> 34(2):302-309
MRL		Goodrich, R.P. and Platz, M.S. (1997), "The design and development of selective, photoactivated drugs for sterilization of blood products," <i>Drugs of the Future</i> 22(2):159-171
MRL		Gordon-Walker et al. (1970), "Excited States of Flavins Characterised by Absorption, Prompt and Delayed Emission Spectra," <i>Eur. J. Biochem.</i> 13:313-321
MRL		Halwer, M. (Oct 1951), "The Photochemistry of Riboflavin and Related Compounds," <i>J. Am. Chem. Soc.</i> 73:4870-4874
MRL		Hanson, C.V., (Mar 1979), "Photochemical Inactivation of Deoxyribonucleic and Ribonucleic Acid Viruses by Chlorpromazine," <i>Antimicrob. Agent Chemother.</i> 15(3):461-464
MRL		Hemmerich, V.P. (1964), "Flavosemichinon-Metallchelat: Modelle zur Erklärung der "active site" in den mitochondrialen Flavoenzymen Zum Verhalten des Riboflavins gegen Metallionen III," <i>Helv. Chim. Acta</i> 47(55):464-465 (In German)
MRL		Herfeld et al. (1994), "Poly (pyrrolicarboxamides) linked to photacvivable chromophore isoalloxazine. Synthesis, selective binding, and DNA cleaving properties," <i>Bioconjugate chem.</i> 5(1):67-76 (CAS Printout)

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Herfeld et al. (1998), "Synthesis, DNA-binding properties and cytotoxic activity of flavin-oligopyrrolicarboxamide and flavin-oligoimidazolecarboxamide conjugates," <i>Anti-Cancer Drug Design</i> 13:337-359
MRL		Herfeld et al. (1998), "Synthesis, DNA-binding properties and cytotoxic activity of flavin-oligopyrrolicarboxamide and flavin-oligoimidazolecarboxamide conjugates," <i>Anti-Cancer Drug Design</i> 13:337-359 (CAS Printout)
MRL		Hoffman, M.E. and Meneghini, R. (1979), "DNA Strand Breaks in Mammalian Cells Exposed to Light in the Presence of Riboflavin and Tryptophan," <i>Photochemistry and Photobiology</i> 29:299-303
MRL		Holström (Mar 1964), "Spectral studies of the photobleaching of riboflavin phosphate," <i>Arkiv för Kemi</i> 22(23):281-301
MRL		Ito et al. (June 1993), "Hydroxydeoxyguanosine Formation at the 5' Site of 5'-GG-3' Sequences in Double-stranded DNA by UV Radiation with Riboflavin," <i>J. Biol. Chem.</i> 268(18):13221-13227
MRL		Ivanchenko, V.A. et al. (Aug 1975), "The photochemistry of purine components of nucleic acids. I. The efficiency of photolysis of adenine and guanine derivatives in aqueous solution," <i>Nucleic Acids Res.</i> 2(8):1365-1373
MRL		Joshi, P.C. (1985), "Comparison of the DNA-damaging property of photosensitized riboflavin via singlet oxygen (1O_2) and superoxide radical (O_2^-) mechanisms," <i>Toxicology Letters</i> 26:211-217
MRL		Kabuta, H. et al. (1978), "Inactivation of viruses by dyes and visible light," <i>Chem. Abstracts</i> 87(1), Abstract no. 400626
MRL		Kale, H. et al. (1992), "Assessment of the genotoxic potential of riboflavin and lumiflavin; B. Effect of light," <i>Mutation Res.</i> 298:17-23
MRL		Karrer, V.P. et al. (1934), "Weitere Synthesen Lactoflavin-ähnlicher Verbindungen II," <i>Helv. Chim. Acta</i> 16:1516-1522 (In German)
MRL		Kasai, S. et al. (1988), "Intestinal Absorption of Riboflavin, Studied by an <i>In Situ</i> Circulation System Using Radioactive Analogues," <i>J. Nutr. Sci. Vitaminol.</i> 34:265-280
MRL		Kasai, H. and Yamaizumi, Z. (1992), "Photosensitized Formation of 7,8-Dihydro-8-oxo-2'-deoxyguanosine (8-Hydroxy-2'-deoxyguanosine) in DNA by Riboflavin: A Non Singlet Oxygen Mediated Reaction," <i>J. Am. Chem. Soc.</i> 114:9692-9694
MRL		Kasai, S. et al. (1990), "Purification, Properties, and Function of Flavokinase from Rat Intestinal Mucosa," <i>J. Biochem.</i> 107(2):298-303
MRL		Kawai, F. and Tanaka, K (1970), "Riboflavin -Indoles Interaction in Acid Solution," <i>J. Vitamin.</i> 16:215-218

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Kimmich, G.A. and McCormick, D.B. (1963), "Paper Chromatography of Flavin Analogues," <i>J. Chromatogr.</i> 12 :394-400
MRL		Kindack, D.G. et al. (1991), "Separation, identification and determination of lumichrome in swine feed and kidney," <i>Food Additives and Contaminants</i> 8 (6):737-748
MRL		Klebanoff, M.A. et al. (Sept 1993), "The risk of childhood cancer after neonatal exposure to vitamin K," <i>New Eng. J. Med.</i> 329 (13):905-908
MRL		Kobayashi et al. (1983), "The molecular mechanism of mutation. Photodynamic action of flavins on the RNA-synthesizing system," <i>Chem. Abstracts</i> 98 (1), Abstract no. 1200
MRL		Korycka-Dahl, M. and Richardson, T. (1980), "Photodegradation of DNA with fluorescent light in the presence of riboflavin, and photoprotection by flavin triplet-state quenchers," <i>Biochimica et Biophysica Acta</i> 610 :229-234
MRL		Kostenbauder, H.B. et al. (Sept 1965), "Photobinding and Photoreactivity of Riboflavin in the Presence of Macromolecules," <i>J. Pharm. Sci.</i> 54 (9):1243-1251
MRL		Kovalsky, O.I. and Budowsky, E.I. (1990), "Laser (Two-Quantum) Photolysis of Polynucleotides and Nucleoproteins: Quantitative Processing of Results," <i>Photochemistry and Photobiology</i> 51 (6):659-665
MRL		Koziol, J. (1991), "Synthesis of Alloxazine Derivatives by Dealkylation of Isoalloxazines at N-10," <i>Bull. Pol. Acad. Sci.</i> 39 (1):37-39
MRL		Kuratomi, K. and Kobayashi, Y. (1977), "Studies on the Interactions Between DNA and Flavins," <i>Biochimica et Biophysica Acta</i> 476 :207-217
MRL		Kurl, R. and Vilee, C.A. (1985), "A Metabolite of Riboflavin Binds to the 2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TCDD) Receptor," <i>Pharmacology</i> 30 :241-244
MRL		Leontis, N.B. and Westhof, E. (1998), "The 5S rRNA loop E: chemical probing and phylogenetic data versus crystal structure," <i>RNA</i> 4 :1134-1153
MRL		Lim, A.C. and Barton, J.K. (1993), "Chemical probing of tDNA ^{Phe} with transition metal complexes: a structural comparison of RNA and DNA," <i>Biochemistry</i> 32 (41):11029-11034
MRL		Maddox, J. (Oct 1991), "The working of vitamin K," <i>Nature</i> 353 (6346):695
MRL		Malik et al., (1990), "New trends in photobiology - bactericidal effects of photoactivated porphyrins - an alternative approach to antimicrobial drugs," <i>J. Photochem. Photobiol. Pt. B: Biology</i> , 5 :281-293
MRL		Malles, K. et al. (1989), "Synthesis and Biological Activities of Some New Substituted Alloxazines and Isoalloxazines: Part 1," <i>Acta Ciencia Indica</i> XV (2):67-74
MRL		Matthews, J.L. et al. (1988), "Photodynamic therapy of viral contaminants with potential for blood banking applications," <i>Transfusion</i> 28 (1):81-83

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		McCord, E.F. (1984), "Chemically induced dynamic nuclear polarization studies of yeast," <i>Biochemistry</i> 23 :1935-1939
MRL		McCormick, D.B. (Apr 1970), "Flavin Derivatives via Bromination of the 8-Methyl Substituent (1)," <i>J. Heter. Chem.</i> 7 :447-450
MRL		Merenstein, G.B. et al. (1993), (Vitamin K Ad Hoc Task Force), "Controversies concerning vitamin K and the newborn," <i>Pediatrics</i> 91 (5):1001-1003
MRL		Merrifield, L.S. and Yang, H.Y. (Sept 1965), "Factors affecting the antimicrobial activity of vitamin K5," <i>Appl. Microbiol.</i> 13 (5):766-770
MRL		Merrifield, L.S. and Yang, H.Y. (Sept 1965), "Vitamin K ₅ as a fungistatic agent," <i>Applied Microbiol.</i> 13 (5):660-662
MRL		Mitsuda et al. (1970), "Riboflavin -Indoles Interaction in Acid Solution," <i>J. Vitamin.</i> 16 :215-218
MRL		Moonen, C.T.W. et al. (Nov 1982), "A photo-CIDNP study of the active sites of <i>Megasphaera elsdenii</i> and <i>Clostridium MP</i> flavodoxins," <i>FEBS Lett.</i> 149 (1):141-146
MRL		Murata, A. et al. (1983), "Effect of vitamins other than vitamin C on viruses: virus-inactivating activity of vitamin K5," <i>J. Nutr. Sci. Vitaminol (Tokyo)</i> 29 (6):721-724
MRL		Murthy, Y.V.S.N. and Massey, V. (Dec 1995), "Chemical Modification of the N-10 Ribityl Side Chain of Flavins," <i>J. Biol. Chem.</i> 270 (48):28586-28594
MRL		Naseem, I. et al. (1988), "Effect of alkylated and intercalated DNA on the generation of superoxide anion by riboflavin," <i>Bioscience Reports</i> 8 (5):485-492
MRL		Nogami, H. et al. (1970), "Pharmacokinetic Aspects of Biliary Excretion. Dose Dependency of Riboflavin in Rat," <i>Chem. Pharm. Bull.</i> 18 :228-234
MRL		North, J. et al. (1993), "New Trends in Photobiology (Invited Review)," <i>J. Photochem. Photobiol. B: Biol.</i> 17 :99-108
MRL		Ohkawa, H. et al. (Feb 1983), "New Metabolites of Riboflavin Appeared in Rat Urine," <i>Biochem. Intl.</i> 6 (2):239-247
MRL		Oka, M. and McCormick, D.B. (1985), "Urinary Lumichrome-Level Catabolites of Riboflavin are due to Microbial and Photochemical Events and Not Rat Tissue Enzymatic Cleavage of the Ribityl Chain," <i>J. Nutr.</i> , 115 :496-499
MRL		Ono, S. et al. (Feb 1986), "Effects of Aging on the Formation of Ester Forms of Riboflavin in the Rat Lens," <i>Internat. J. Vit. Nutr. Res.</i> 56 :259-262
MRL		Parks, O.W. and Allen, C. (1977), "Photodegradation of Riboflavin to Lumichrome in Milk Exposed to Sunlight," <i>J. Dairy Sci.</i> 60 (7):1038-1041

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Peak, J.G. et al. (1984), "DNA Breakage Caused by 334-nm Ultraviolet Light is Enhanced by Naturally Occurring Nucleic Acid Components and Nucleotide Coenzymes," <i>Photochemistry and Photobiology</i> 39(5) :713-716
MRL		Piette, J. et al. (1981), "Alteration of Guanine Residues During Proflaving Mediated Photosensitization of DNA," <i>Photochemistry and Photobiology</i> 33 :325-333
MRL		Piette, J. et al. (1979), "Production of Breaks in Single- and Double-Stranded Forms of Bacteriophage ϕ X174 DNA by Proflavine and Light Treatment," <i>Photochemistry and Photobiology</i> 30 :369-378
MRL		Pratt, R. et al. (Mar 1950), "Vitamin K ₅ as an Antimicrobial Medicament and Preservative," <i>J. Am. Pharm. Ass'n</i> 39(3) :127-134
MRL		Product advertisement for "Ultracure 100SS Plus Specifications," EFOS USA, Inc., Williamsville, NY, USA
MRL		Radda, G.K. and Calvin, M. (Mar 1964), "Chemical and Photochemical Reductions of Flavin Nucleotides and Analogs," <i>Biochem.</i> 3(3) :384-393
MRL		Rivlin, R.S. (Aug 1970), "Riboflavin Metabolism," <i>New Engl. J. Med.</i> 283(9) : 463-472
MRL		Roughhead, Z.K. and McCormick, D.B. (1990), "Qualitative and Quantitative Assessment of Flavins in Cow's Milk," <i>J Nutr.</i> , pp. 382-388
MRL		Salim-Hanna, M. et al. (Jan 1987), "Obtention of a Photo-Induced Adduct Between a Vitamin and an Essential Aminoacid. Binding of Riboflavin to Tryptophan," <i>Internat. J. Vit. Nutr. Res.</i> 57 :155-159
MRL		Sato, K. et al. (Oct 1995), "The Primary Cytotoxicity in Ultraviolet-A-Irradiated Riboflavin Solution is Derived from Hydrogen Peroxide," <i>J. Investig. Dermatol.</i> 105(4) :608-612
MRL		Scheindlin, S. et al. (Aug 1952), "The Action of Riboflavin on Folic Acid," <i>J. Am. Pharm. Assn.</i> XLI :420-427
MRL		Schoo, H.F.M. and Challa, G. (Jan 1992), "Flavin-Containing Polyanions: Synthesis, Activity, and Immobilization in Polyelectrolyte Complexes," <i>Macromolecules</i> 25 :1633-1638
MRL		Silva, E. et al. (1994), "Riboflavin-sensitized photoprocesses of tryptophan," <i>J. Photochem. Photobiol. B: Biol.</i> 23 :43-48
MRL		Silva, E. and Gaule, J. (1977), "Light-Induced Binding of Riboflavin to Lysozyme," <i>Rad. Environm. Biophys.</i> 14 :303-310
MRL		Silva, E. et al. (1991), "A light-Induced Tryptophan-Riboflavin Binding: Biological Implications," in <u>Nutritional and Toxicological Consequences of Food Processing</u> , Friedman, M. (ed.), Plenum Press, New York, pp. 33-48

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Shwartzman, G., "(1948)Antibacterial Properties of 4-Amino-2-Methyl-1-Naphthol Hydrochloride," <i>Proc. Soc. Exp. Biol. Med.</i> 67 :376-378
MRL		Simukova, N.A. and Budowsky, E.I., (1974)"Conversion of Non-Covalent Interactions in Nucleoproteins into Covalent Bonds: UV-Induced Formation of Polynucleotide-Protein Crosslinks in Bacteriophage Sd Virions," <i>FEBS Letters</i> 38(3) :299-303
MRL		Smith, E.C. and Metzler, D.E. (1963), "The Photochemical Degradation of Riboflavin," <i>J. Am. Chem. Soc.</i> 85 :3285-3288
MRL		Song, P-S. and Metzler, D.E. (1967), "Photochemical Degradation of Flavins -- IV. Studies of the Anaerobic Photolysis of Riboflavin," <i>Photochem. Photobiol.</i> 6 :691-709
MRL		Spranger, J. (1993), "Does vitamin K cause cancer?" <i>Eur. J. Pediatr.</i> 152(2) :174
MRL		Speck, W.T. et al. (1976), "Further Observations on the Photooxidation of DNA in the Presence of Riboflavin," <i>Biochimica et Biophysica Acta</i> 435 :39-44
MRL		Steczko, J. and Ostrowski, W. (1975), "The Role of Tryptophan Residues and Hydrophobic Interaction in the Binding of Fiboflavin in Egg Yolk Flavoprotein," <i>Biochim. Biophys. Acta</i> 393 :253-266
MRL		Swinehart, J.H. and Hess, G.P. (1965), "Riboflavin-Tryptophan Complex Formation as a Criterion for "Buried" and "Exposed" Tryptophyl Residues in Proteins," <i>Biochem. Biophys. Acta</i> 104 :205-213
MRL		Tapia, G. and Silva, E. (1991), "Photo-induced riboflavin binding to the tryptophan residues of bovine and human serum albumins," <i>Radiat. Environ. Biophys.</i> 30 :131-138
MRL		Toyosaki, T. and Hayashi, A. (1993), "Structural analysis of the products of milk riboflavin photolysis," <i>Milchwissenschaft</i> 48(11) :607-609
MRL		Treadwell, G.E. et al. (1968), "Photochemical Degradation of Flavins. V. Chromatographic Studies of the Products of Photolysis of Riboflavin," <i>J. Chromatog.</i> 35 :376-388
MRL		Treadwell, G.E., Jr. and Metzler, D.E. (1972), "Photoconversion of Riboflavin to Lumichrome in Plant Tissues," <i>Plant Physiol.</i> 49 :991-993
MRL		Tsugita, A. et al. (1965), "Photosensitized inactivation of ribonucleic acids in the presence of riboflavin," <i>Biochim. Biophys. Acta</i> 103 :360-363
MRL		Tyrakowska et al. (Jan 1993), "A Fluorescence Study of Lumichrome Phototautomerism in Dodecylammonium Propionate Reversed Micelles," <i>J. Photochem. Photobiol. A.</i> 72 :235-241
MRL		Van Schagen, C.G. et al. (1982), "Photochemically Induced Dynamic Nuclear Polarization Study on Flavin Adenine Dinucleotide and Flavoproteins," <i>Biochemistry</i> 21(2) :402-407

Form PTO 1449		
ATTY DOCKET NO. 27-98B	SERIAL NO. 09/596,429	FILING DATE June 15, 2000
APPLICANT Goodrich et al.		GROUP 1744

MRL		Vest, M. (1966), "Vitamin K in Medical Practice: Pediatrics," <i>Vitam. Horm.</i> 24 :649-663
MRL		Warburg, V.O. and Christian, W. (1932), "Über das neue Oxydationsferment," <i>Naturewiss</i> 20 :980-981 (In German)
MRL		Webb, R.B. and Malina, M.M. (1967), "Mutagenesis in Escherichia coli by Visible Light," <i>Science</i> 156 :1104-1105
MRL		Woodcock, E.A. et al. (1982), "Riboflavin Photochemical Degradation in Pasta Measured by High Performance Liquid Chromatography," <i>J. Food Sci.</i> 47 :545-549
MRL		Yang, C.S. et al. (1964), "Microbiological and Enzymatic Assays of Riboflavin Analogues," <i>J. Nutrition</i> 64 :167-172
MRL		Yang, H.Y. et al. (Oct 1958), "Vitamin K ₅ as a Food Preservative," <i>Food Technology</i> 501-504

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<i>Morgan R. Charley</i>	<i>07/15/2003</i>
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	

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